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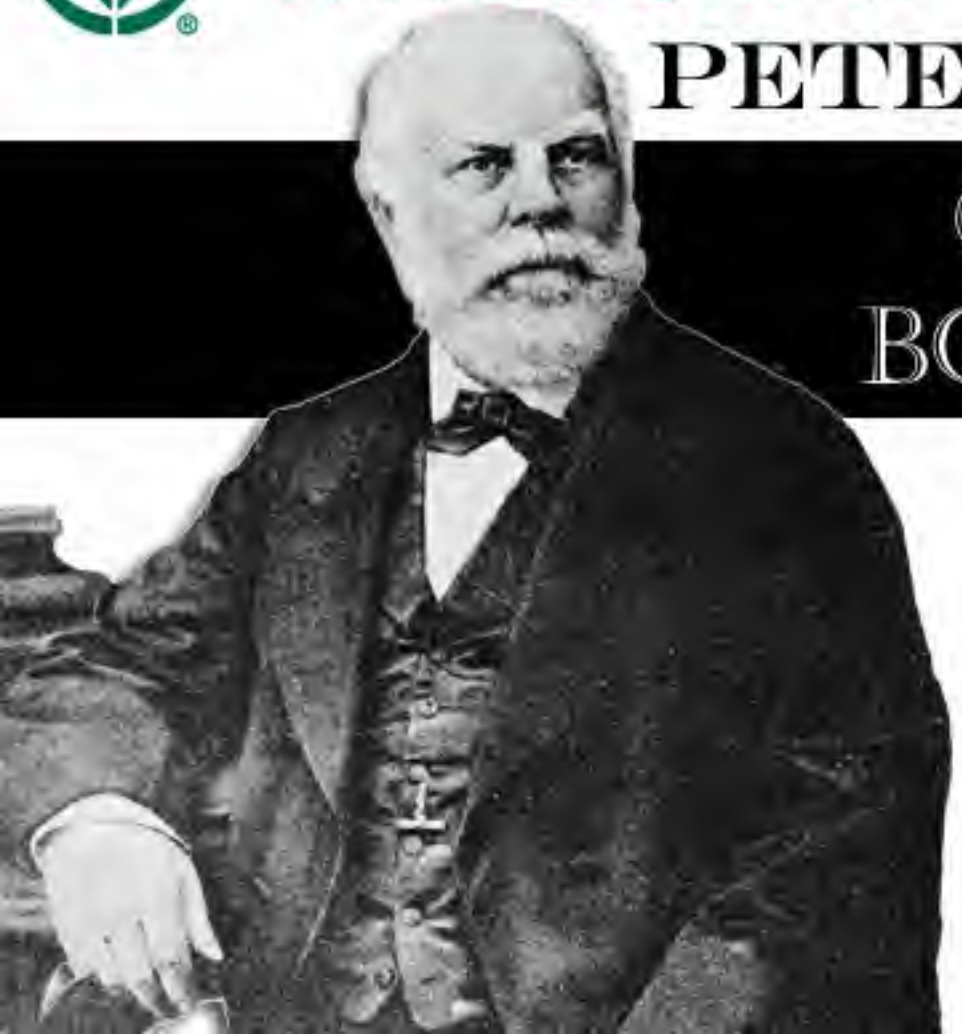

Pagination Note:
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IV. *Direction of Winds and number of Thunderstorms in* '61 & '62.

1861.	E.	N.	N.E.	S.W.	N.W.	S.	W.	S.E.	Prevailing Winds.	Thunder-storms.
January.....	11	3	12	22	38	18	28	61	S.E.	 0
February	4	2	2	35	24	19	41	60	S.E.	 2
March.....	12	11	10	23	30	19	42	40	W. & S.E....	 3
April	16	10	9	26	21	35	34	26	S. & W.....	 2
May	26	10	23	21	8	13	49	35	W. & S.E. ...	 5
June	12	21	22	20	25	26	8	41	S.E.	 7
July	3	31	14	21	26	46	15	29	S.	 3
August	18	24	58	17	11	18	3	37	N.E.	 5
September...	6	14	18	26	30	13	21	52	S.E. & N.W.	 3
October	12	9	5	21	30	33	30	46	S.E. & S....	 1
November....	7	15	8	22	27	20	36	44	S.E. & W....	 1
December ...	9	19	9	25	23	33	17	51	S.E. & S.....	 0
	136	169	190	279	293	293	324	522	S.E.	 32

1862.	E.	S.W.	N.	N.E.	W.	S.	N.W.	S.E.	Prevailing Winds.	Th. st's.
Jan.....	19	6	19	23	29	3	38	51	S.E.	1
Feb.....	14	9	18	16	22	7	39	43	S.E. & N.W.	0
March ...	9	14	3	15	59	10	34	43	W., S.E. & N.W....	4
April	12	13	18	31	18	11	34	47	S.E., N.W. & N.E..	6
May.....	12	18	14	38	18	30	14	44	S.E. & N.E.	5
June	3	29	24	16	8	36	26	23	S., S.W., N.W., N. & S.E.....	6
July.....	5	25	17	7	2	24	31	77	S.E.	10
August..	6	16	16	45	5	22	28	48	S.E. & N.E.....	7
Sept.	16	10	21	18	11	18	13	72	S.E.	6

Additional Remarks on Atmospheric Electricity.

By A. Wislizenus, M.D.

The delay in the publication of this volume enables me to add to my observations of atmospheric electricity in 1861, the result of my observations in 1862. The latter observations have been made in the same manner and by means of the same fine glass thread, which, after many thousand torsions, proves as good as ever. I present herewith in tabular form the general result of my observations in 1861 and 1862.

I. *Monthly mean of Positive Atmospheric Electricity in* 1861 *and* 1862, *at St. Louis, Mo., based upon daily observations at* 6, 9, 12, 3, 6 *and* 9 *o'clock, from morning till night.*

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861*.	16.5	12.1	9.8	8.8	7.8	4.0	3.7	3.4	3.0	7.1	10.0	14.3	8.4
1862...	12.1	16.0	9.4	10.6	7.5	3.0	2.2	2.3	3.0	7.7	12.6	13.9	8.4

* This table of 1861 differs in some decimals from that published on page 66 and in Diagram No. 1. Having discovered some errors, I calculated all my observations once more, and give now the present as the corrected table.

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Pinus Pence

Macedonia Theod Orphanides 1862

Cones reduced, but sessile

Cylindrical 5 1/2 inches long, about 1 1/2 inches in diam.,
Scales aureate, semicircular above, thin with
scarcely any trace of an umbo, the margins
fully one inch wide

In 5/13 arrangement; the 3 and 5 spirals
most prominent.

Seed rather large, wing widest at or below the middle,
~~nearly~~ 3 times as long as seed itself; adhering
to the seed

11504

Deutsche Apotheke

—von—

John G. Schütze,

Südwestliche Ecke von Broadway und Morgan Straße,

St. Louis, Mo.

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is lowered, and in many cases, as in tonsilitis, the inflamed organ recovers its natural condition as quickly as the skin does when the muriated tincture is administered uncombined in a case of erysipelas. In the early stage of typhoid fever, I know of no means more likely to mitigate the symptoms and calm the patient than the combination of the muriated tincture of iron and the acetate of ammonia, but in larger doses than seem to be tolerated in most other diseases. A medical friend, to whom I recommended the employment of the combination some years ago, has since assured me that he has observed many cases of typhoid fever apparently cut short by its use, and that he never omits it at the commencement of the treatment in any case.

In scarlatina, the early use of the ferruginated diaphoretic, and afterwards of the iron singly, or in combination with quinine and nitric ether, will, in most epidemics, effect all that can be accomplished by medicines. In the inflammatory form of Bright's disease, occurring from sudden chill, I have seen a speedier convalescence obtained by means of this combination than by any other plan of treatment.

I will only notice one other class of cases where it has, in my hands, proved eminently useful; viz., in puerperal metritis and peritonitis. When given at the very commencement, in conjunction with the application of turpentine stupes to the abdomen, a few hours will often find the patient transferred from a state of extreme suffering and danger into one of comparative ease and safety.

The therapeutic value of the combination of the muriated tincture of iron with the acetate of ammonia in the diseases in which I have employed

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a free use of it has only brought one case, where it might possibly be blamed, under the writer's notice. In some cases it might seem desirable to administer the tincture in a bitter infusion before food, and the iron after food—restorative remedies acting most powerfully when digested along with the food.

In conclusion, let me say that a free, fair, and impartial trial of digitalis, in atonic conditions of the heart, is most desirable, as, if the above-announced view of it be correct, it is an agent which stands alone in our pharmacopœia, and holds out hopes to the suffering patient which no other remedy can supply. Let the trial be as general as possible, if conviction is to be generally attained, in the present state of medical thought on the subject, whether the newer views be substantiated or not. It certainly will sometimes be a trial of the practitioner's moral courage to prescribe it, with the old idea as to its sedative action to deter him. But let him not be afraid, since Sir H. Holland wrote: "The enlarged and flaccid heart, though, on first view, it might seem the least favorable for the use of the medicine, is, perhaps, not so." The idea as to its tonic action has constantly been growing, till I venture to say, that the thinner the muscular walls of the heart, the feebler their action, and, probably, enerate their structure, the more imperative the neces-

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Dr. Engelmann stated that the mean temperature of July (77.°5) had been lower than the usual mean of that month, and that the fall of rain during the same month (2.04 inches) was about one-half less than usual.

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August 19, 1861.

The President, Dr. ENGELMANN, in the chair.

Six members present.

A letter was read from A. F. Bandelier, Jr., Highland, Ill., Aug. 1, 1861, communicating meteorological observations at Highland.

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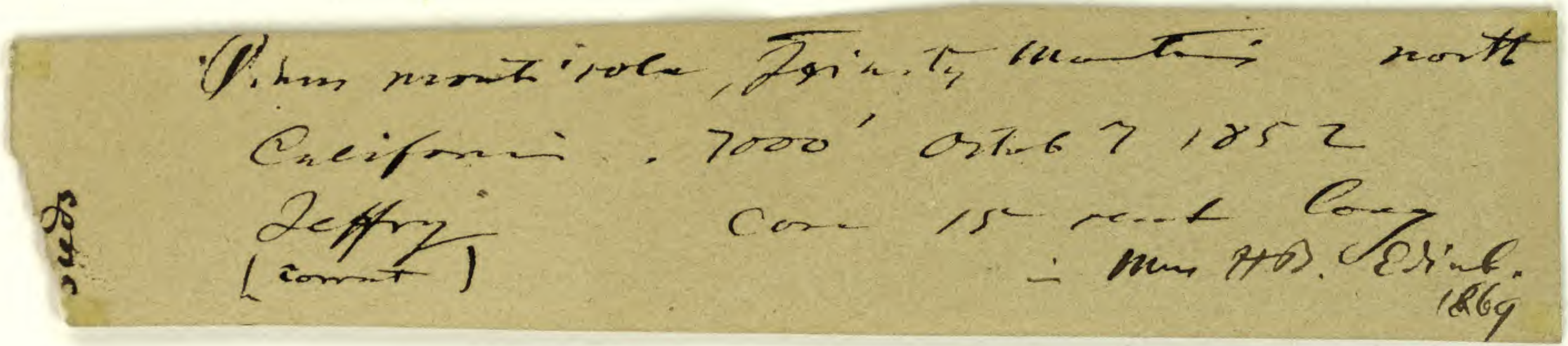
Pinus monticola, Trinity Mountains north
California. 7000' Oct 6 7 1852
Jeffrey
(comm.) Com 15th rept Corp
Mus HD. Edinb.
1869

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Brewer – Letter to Pinus 1864

Pinus Montezola ? very similar to Lambertiana, only smaller, with lighter colored bark, splitting in square scales, leaves much shorter, ones much like P. Lambertiana, only much smaller and rather looser. It is more alpine, grows at altitudes of over 10,000 feet sometimes, and rarely below 8000'. It is called P. Balfouriana by some of the seed collectors.

These are all the Pines with which I am familiar.

11508

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Office & Residence; 3003 Locust St.

P. montivola Cattle S. of pine
commences on the Sierra, there Leading
crazes — abot 7—9000 ft. Abd
bark smooth, Rich — small
bell with A magnificia 9-10,000
much rarer than Lambertiana
Gall's Cone is 7/2 miles = Kern

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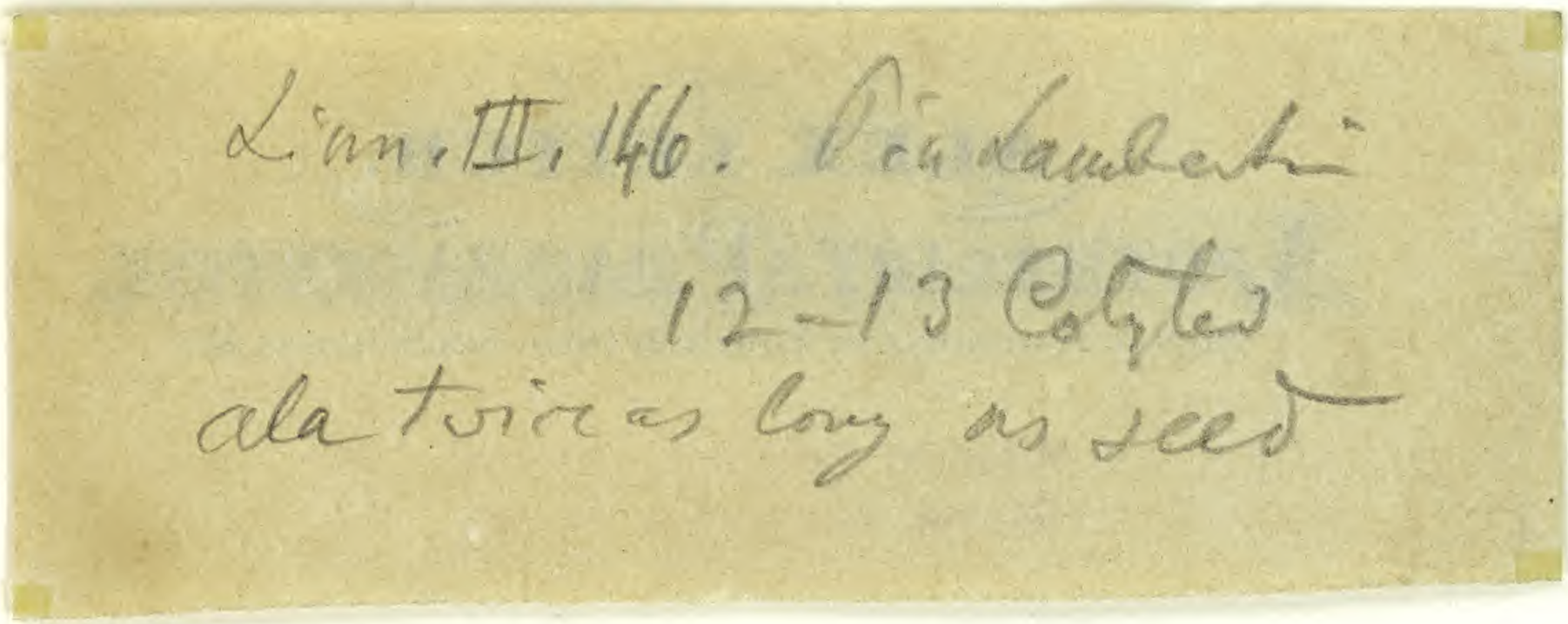

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J. Leonbatiana ~~good Golden~~ Sugar pine
5–7000 feet alt. not uncommon
Here Rothrock was 1875.
13–15, usually 15 cotyl!
Bolanders: On both slopes of the Valley;
on the coast range only on the highest
parts, from Santa Lucia to Humboldt Co. & north
male flowers (from a distance, near the
Geysers) beautiful, pendulous,
perhaps 2–4 inches long & 1/2 as broad
& difficult to obtain, & too tough!
Woods on the Sierras with ponderosa
& Lambertiana: A conolor.

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PER MARE PER TERRAS

PRESCRIPTION DRUGGISTS,

3005 OLIVE STREET,

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H. H. B. Distr. Aug 30 1869

Pinus Lambertiana

Head not ridged at all
on side of wing gradually attached
to head and breaking off regularly
as in Strobus

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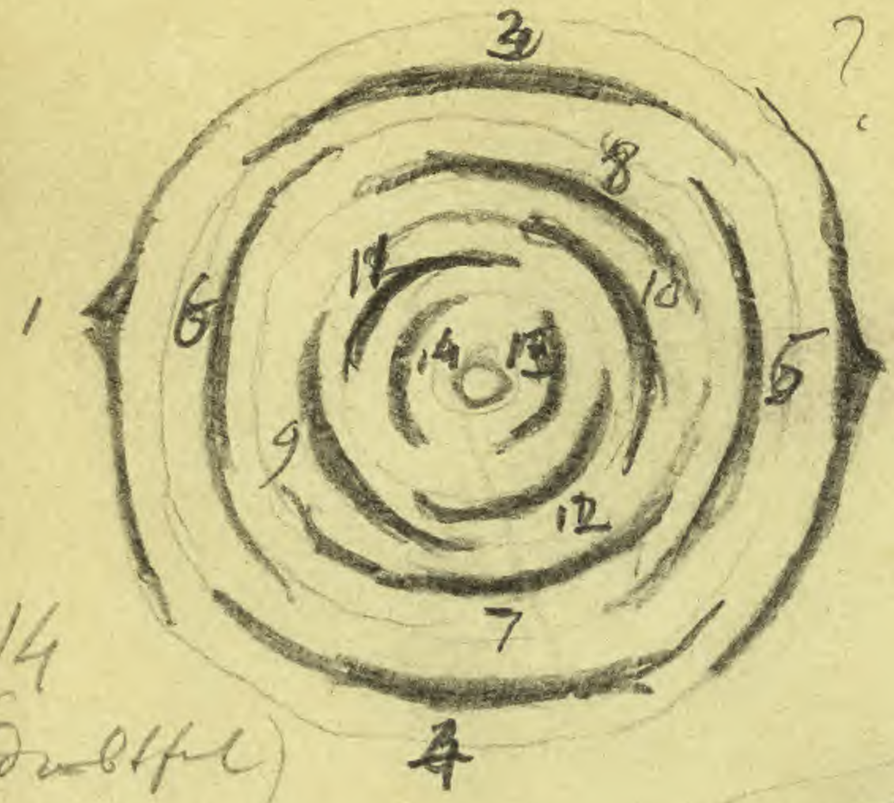
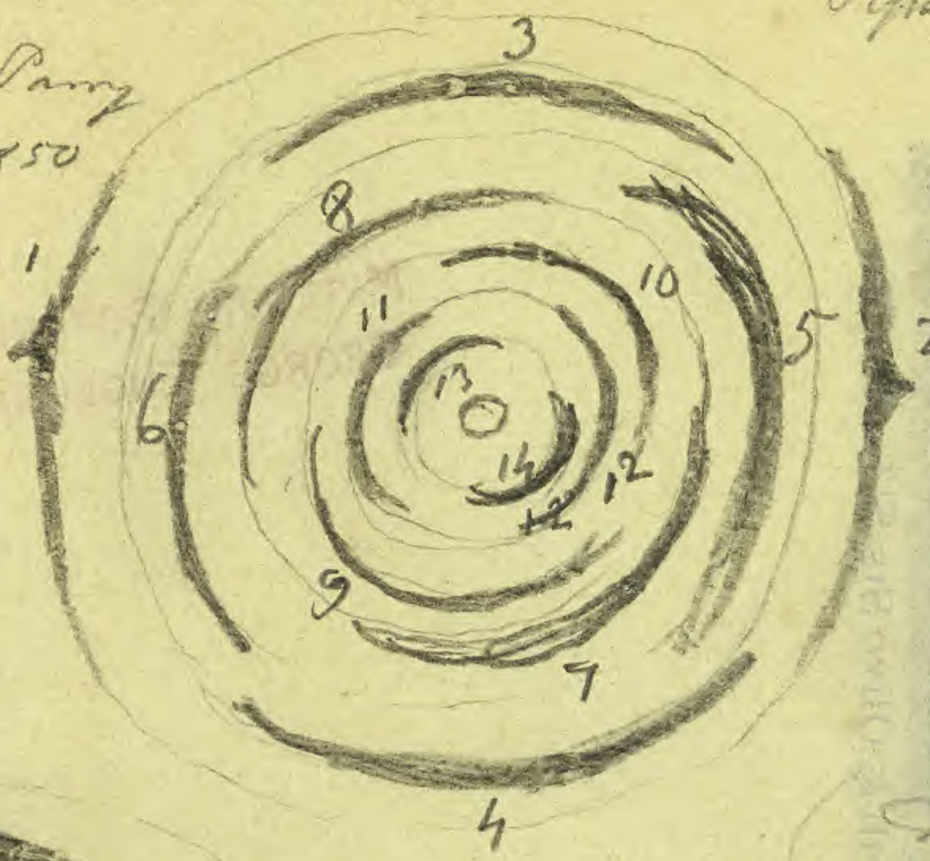
Pinus Lambertiana

? D Don
1850

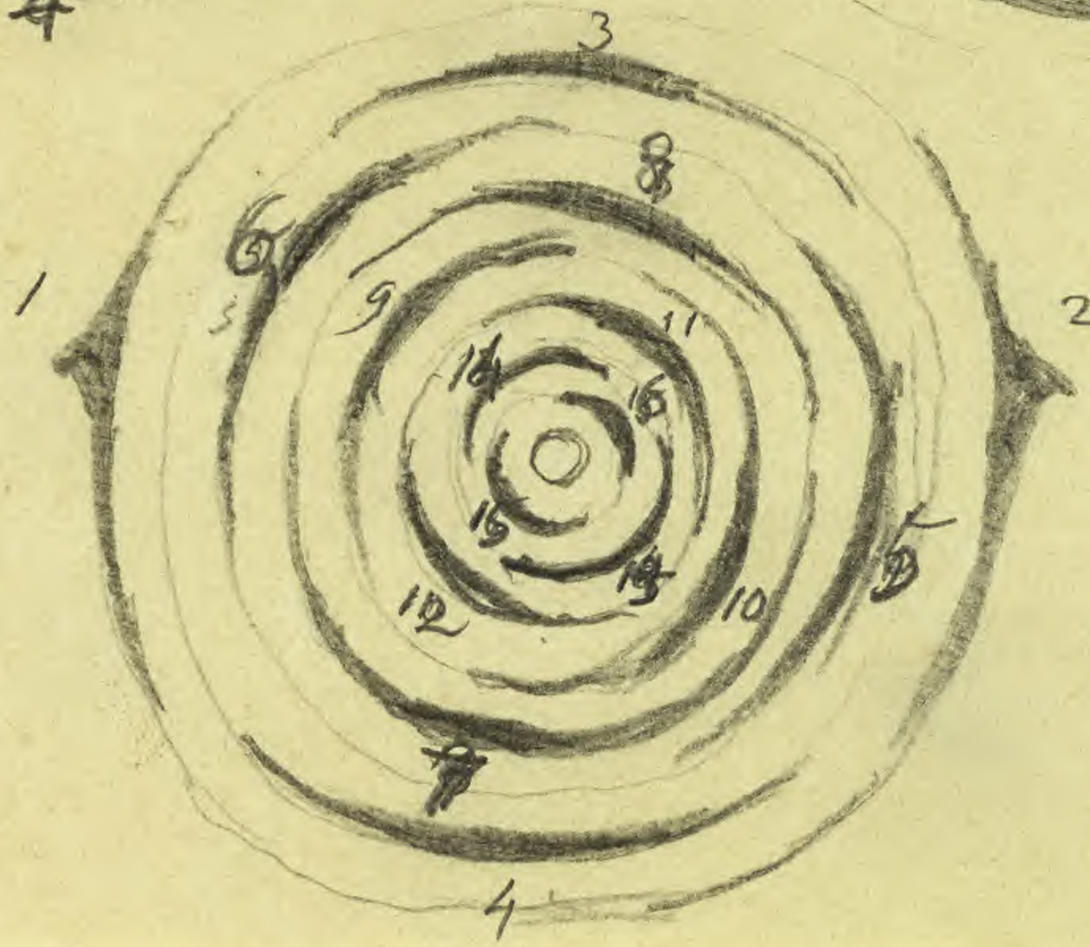
Sept 26 1863



14 (Doubtful)



14 scales



Involucre of male ament

16 scales

probably not correct.

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Dr Brewer's letter to Dr Parry on Coulter

San Francisco March 14 1864

Pinus Lambertiana is the noblest species of the genus.
Its true home is in the Sierras in the forest belt at alt.
3000 – 7000. feet – Its habit is very peculiar; bark
splitting in fine divisions; trunk straight and often 6–10
feet diameter, and 200 feet or more without branches;
head symmetrical – tree often 200 feet high, and very
commonly 225 – 250 feet. Branches horizontal, the great
cones pendant from the end of the branches like huge tassels.

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Sept 15 1872

Stobes to be examined:

sculpture of leaves — tip —

scales of cone probably all — 5/13

direction of apophysis spreading or appressed

apophysis inside & outside

grooved — striate (Stobes except Pumo

or not (all others

seed and its position —

wing of seed or not

wing proportion to seed

wing rounded or pointed

reaching near to apophysis (Stobes)

or not as high up (Monticola &c)

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Adams Express Company,

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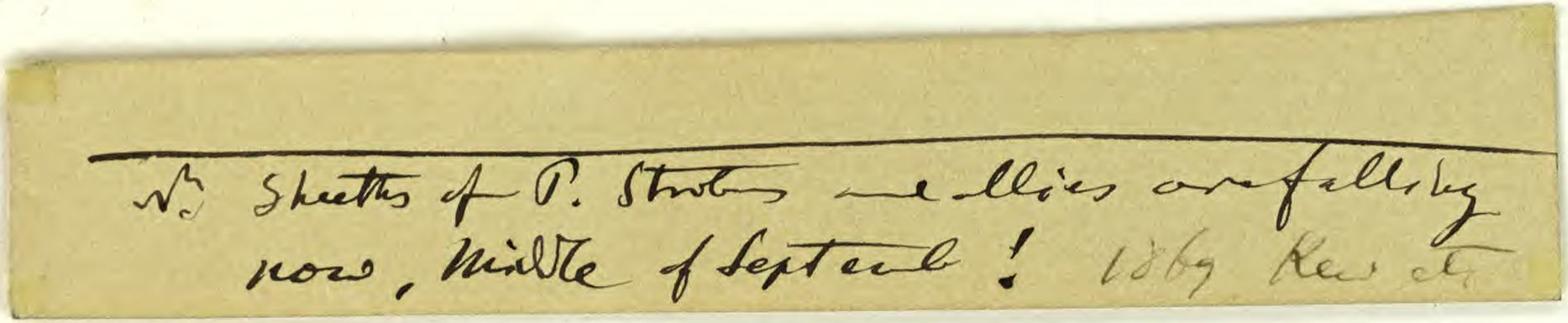
No Sheets of P. Stratus and allies are fully dry
now, Middle of September! 1869 Kew
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DER,
A R Y .
UT STREETS,
l,
Mo.

11519

Notes and Sketches.

Engelmann.

LIII.

Coniferae.

6. Pinus.

7-457

Pines

11520

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Pinus

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Strobus

1. Strobus

pumilo
Ayacahuite
Gordoniii
Strobus
excelsa
Peuce
monticola
Flexilis Lambertiana

2 Flexilis

flexilis
albicaulis
pygmaea

3 Cembra

Cembra
Mandschurica
Koraiensis

497-521

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long, moistening the paper by rapidly dipping it into pure water, and then pin-

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up in a covered jar and k
two observations a day,
a "night observation" fr
on by taking a slip of te

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Ozone is not found in large quantity over marshes and swamps during the season of active decomposition of vegetabie matter.

VARIATION IN THE SAME LOCALITY.

The amount of ozone is not uniform in the same locality. In this State it is much more abundant in winter than in summer. It is in inverse ratio to the temperature: as the temperature falls the ozone increases, and *vice versa*. For the greater part of the year there is more ozone by night than by day, but during hot weather this condition is reversed.

It would be interesting to know whether the night air of summer is so much more unhealthy than that of winter because of this deficiency of ozone by night in summer. It is stated that the air over the Dismal Swamp of Carolina is so loaded with miasm during warm weather, that passengers in the railroad cars at night are almost certain to contract malarious disease if they ride with the car windows open. It would be very interesting to know the amount of ozone over the Dismal Swamp by night during the summer months.

The amount of ozone which is present in air at any one time is very small. According to Houzeau the maximum amount of ozone, even in country air, is only one part by volume in 700,000, or one part by weight in 450,000.

HOW OBSERVED AND RECORDED.

There are several tests which may be employed to detect the presence of ozone. Of these I prefer the Schonbein test, because it is the most sensitive, and because the wide variation of the tint enables us to distinguish small variations in the amount of ozone, and thus secure a number of degrees in our scale.

The Schonbein test paper is prepared by adding ten parts of best quality of starch to 200 parts of pure water, heating this till the starch gelatinizes, and then dissolving in this one part of pure iodide of potassium (free from iodate). This paste is then spread evenly with a flat brush on sheets of paper free from sizing, which are then rapidly dried by stove heat, without exposure to sunlight, and are stored up in a covered jar and kept from exposure to light.

I make two observations a day, viz.: A "day observation" from 7 A. M. to 9 P. M., and a "night observation" from 9 P. M. to 7 the next morning. I make each observation by taking a slip of test paper one-half inch wide and four inches long, moistening the paper by rapidly dipping it into pure water, and then pinning it up where it will be screened from sunshine, but freely exposed to diffuse daylight and to the air. I moisten the paper before exposure because ozone does not form or does not act on perfectly dry substances. At the close of the observation, I dip the paper into clear water, and compare it with the ozone scale. This is drawn on a scale of ten, varying from the lightest perceptible tint of purple to the deepest purplish blue of iodide of starch. To fix the observation, ascertain what portion of the scale most nearly corresponds in tone with the prevailing color of the moist test paper. In making this observation, I consider the *prevailing color* of the test paper, disregarding the exceptional spots or

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streaks. The figure on that part of the ozone scale which corresponds in tone with the color of the test paper, is entered in the records for the observation. If there is no discoloration of the test paper, no ozone is present, and a cipher is entered on the record for that observation.

PROPERTIES OF OZONE.

Ozone is an intensely oxidizing agent, capable of effecting at ordinary temperatures chemical changes of which ordinary oxygen is utterly incapable. It oxidizes all the metals except gold and the platinum group. Even silver is oxidized by it. It instantly burns phosphuretted hydrogen; oxidizes and destroys sulphuretted hydrogen; oxidizes hydrochloric acid, rendering it capable of dissolving gold leaf; oxidizes iodide of potassium, setting free the iodine and forming caustic potash. I also find that ozone will readily decompose bromides, setting free bromide, as is shown by the reaction with gelatinized starch. This reaction with starch is very brief, but the odor of the liberated bromide is very strong. Persons at the seaside often observe a strong "cholorous smell" from sea water. It is much more probable that the odor is "*bromous*," from decomposition of bromides in sea water by ozone, which is often so abundant by the sea.

I find also, a fact not before observed so far as I am aware, that ozone will, at ordinary temperatures, oxidize the deadly carbonic oxide into the comparatively innocent carbonic dioxide or carbonic acid. Carbonic oxide is one of the most deadly gasses known. Unlike sulphuretted hydrogen, phosphuretted hydrogen, and ammonia of animal origin, it gives no warning of its presence by its odor or other sensible property. The power of ozone to oxidize this deadly gas at ordinary temperatures is a fact of prime importance in preserving the purity of our atmosphere. It has been a question in my mind whether carbonic oxide is not given off with other materials in the mixed gases which escape from decoposing organic matter in swamps, and is not one potent factor in miasm? May not the rapid disappearance of the red globules, and consequent anæmic appearance so often produced by miasmatic diseases be caused by the well known power of carbonic oxide to destroy the red globules? I have had no opportunity to investigate this subject, but I throw out the suggestion for your consideration. But whatever the nature of miasm or malaria, the power of ozone to oxidize carbonic oxide to carbonic acid at ordinary temperatures can not be an unimportant factor in preserving the purity of the air.

Ozone will oxidize ammonia into nitrate of ammonia, and will, in particular, oxidize the ammoniacal compounds which are produced by the decomposition of azotized organic matter. This power of ozone to oxidize the hydrogen compounds of sulphur, phosphorus, and nitrogen, enables it to destroy the offensive products of animal decomposition. Thus it will instantly destroy the horrible smell of rotten eggs. Schonbein found that air made foul by exposure for one minute to four ounces of highly putrid meat, was disinfected by an equal volume of air containing only one part of ozone in 3,240,000 parts of air. Ozone

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